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Environmentalism in the age of Biologism

Talk of mysteries! Think of our life in nature — daily to be shown matter,
to come in contact with it — rocks, trees, wind on our cheeks!
the solid earth! the actual world! the common sense!
Contact! Contact! Who are we? Where are we?"
— Henry David Thoreau

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Abstract

One of the main areas of concern for environmentalists is nature. But what does it really mean for contemporary western man? What does it mean for biologists and for environmentalists? Many environmental philosophers have contributed to these topics (e.g. Merchant, 1990, Plumwood, 1993), nevertheless the question has remained painfully unsolved until recent times. This paper provides the author´s brief interpretation of the crucial moments in modern philosophy concerning our understanding of nature and what nature means for today's biologists and the consequences for environmentalism and the conservation of nature.

The author assumes that, despite massive developments in modern science and many impressive breakthroughs, we are in principle still locked into a mechanistic model of the universe, as created by Galilei, Descartes and Newton. It has fundamental consequences for biology, for our understanding of nature and also for environmentalism. What are environmentalists protecting? Some inert matter controlled by mechanical natural laws? If not, what is alive in the environment that they are fighting for? In terms of recent evolutionary thinking, there is ultimately nothing to protect. Nature has no value in itself.

Recent environmentalism has just taken over scientific knowledge and for this reason it suffers from the fundamental and inherent contradiction that in many ways it is trying to protect nature from the various consequences of the mathematical-mechanistic view of the world, but to understand and resolve those consequences environmentalists use our knowledge of biology, which is ultimately based on the mathematical-mechanistic view of the world. So quite possibly their work is contributing to the problem, and at the same time it is also becoming epistemologically dependent on natural science, which brings this knowledge.

Until environmentalists do not bring their own concept of reality, which would at least try to offer the original explanation of nature as living and valuable, there is little chance of real improvement in recent environmental problems.

Key words: crisis of environmentalism, understanding of nature, biologism, death nature, environmentalism and evolution, subject of environmentalism, biological alternatives

Introduction

The journal *Development, Environment and Foresight,* bears in its name two key terms of environmental discourse of recent decades, which have found their determinate place in the scientific, social and political reality of the contemporary world, especially in developed countries. The foundation of the journal thematizing on the above mentioned areas is a good opportunity to reflect what is the current '*State of the Art'*, what areas of knowledge they are connected with today and identify problems brought on by the transformation of their subjects?

In terms of the three key concepts - *the development, environment and foresight* – I would like, in this article, to focus on several problems that are associated with the term "environment", especially on the role played by knowledge of the natural science in environmental studies, how they are used in environmental discourse in the description of environmental problems and the consequences on environmentalism on its epistemological dependence on current knowledge, methods and paradigms in the natural sciences. In other words - or from an historical prospective - I will try to outline how nature changed in the Baroque into the so called dead machine, how this fact is still imprinted in the understanding of nature in contemporary natural science, and what consequences this entails for environmentalism.

Philosophical reflection of environmentalism

The subject of a wide range of various environmental trends and movements was from the very beginning (no matter where we put it; e.g. Binka, 2008:69-77) struggling with the current problems in both a practical level (protection of nature) and at the level of interpretation (finding the causes in the moral dimension of humanity; e.g. Schweitzer, 1989), the roots of ecological attitudes (Deval, Session, 1985) or for example adoration of wild as natural (Thoreau, 1854). Despite a number of lesser-known (but no less important) earlier proto-philosophical attempts (e.g. Routley 1973), it was the appearance of Arne Naess (Naess, 1977), who first introduced the meeting of environmental challenges with rigorous concepts of Western philosophy. Following this merger it was considered only a matter of time before the studies seeking the causes of environmental problems would appear, and not only seeking the causes in the current industrial destruction of nature and the religious traditions of the West (White, 1967), but also in the very roots of European thinking. Among the crucial works published on this subject, I consider texts such as, *The Death of Nature* by Carolyn Merchant (1990). Important is that texts as these have contributed to the answer of the question of questions, not only in biology – in which context it was stated by Darwin's 'bulldog' Thomas H. Huxley (Huxley, 1906), but also in the context of the struggle for identity of the environmental discourse (e.g. Holland, 2009). Which; is a question of *the place of man in nature*. And in connection with this question, they offer insight into the different perceptions of changes in the understanding of nature which led to environmental problems.

The question of the place of man in nature is kind of festering wound which has regularly emerged during modern history, just to be classified as – not solved – postponed again. One would say the question was 'one of continuous procrastination', usually under the pretext of solving practical problems, whose solution is somehow easier, if not for any other reason, than just for its apparentness. However, this issue still remains with genuine urgency. At its core is a fundamental schism between reality, as we perceive it sensoriarlly by our natural senses, and the reality constructed by scientific knowledge. This schism was, in their oeuvre, faced by many of the greatest thinkers of modern times, for example Husserl, Heidegger and in the Czech Republic, Jan Patočka, none of them, however managed to overcome hiatus between the natural world of man and man's scientific image of that world. Environmental problems represent just one of the actual manifestation of this fact. In order to better understand the current situation, it will be necessary, at the very least, to indicate the most important part of modern Western thinking, and what is the cause of the current situation.

As mentioned previously, the philosophical contemplation of the past is nothing new to the discourse of environmental philosophy. Before I present my own list of events that played a major role in changing the perception of nature over the last 300 years, let me first mention a few works that had dealt with this topic before. In addition to the aforementioned paper by Lynn White (1967), the list includes White's earlier work *Medieval Technology and Social Change* (White, 1966) and Reijer Hooykaas' *Religion on the Rise of Modern Science* (Hooykaas, 1972). The environmental discourse has been shaped to a considerable extent by ecofeminism. In addition to Carlon Merchant (1990:164-252), whom we mentioned earlier, important contributions were made by Val Plumwood (e.g. 1993: 69 -140) and Freya Mathews (1991:1-30). Noteworthy contributions to the discussion include Clarence Glacken's large monograph *Traces on the Rhodian Shore* (1990) and Pierre Hadot's excellent study *The Veil of Isis* (2008), which deals with the changing concept of nature in the Western thought. A number of environmental texts have been concerned with the distinction between mechanomorphic and organomorphic ways of thinking, for example David Abram's essay *The Mechanical and The Organic* (Abram, 1991). All the authors we have mentioned (and many others) present their own views of the topic, accentuating the aspects they consider important. I would now like to attempt the same.

The death of Nature

Whether this fact is repeatedly relativized and then again seriously taken into consideration, early problems of modern time arose in the late Renaissance and Baroque periods, particularly at the time of Galilei and Descartes. By their thoughts, actions and quills these philosophical giants established the architecture of modern thinking about nature, which in its most basic way, is valid even today.

Galilei's world as a machine[1]

While this would be a great opportunity to summarize a very important and interesting historical context based on Galilei's conclusions (White, 2011), I instead will focus on a brief reminder of what is important for the following consideration. It is not the well-known Galilei's heliocentrism, which he indirectly introduced in his a ground-breaking work *Dialogue Concerning the Two Chief World Systems* (Galilei, 1953), it is more about his ideas on the character of nature. The perfection of nature for him ceased to be an unfathomable mystery of an ingeniously hierarchically arranged God's creation, but the flawlessness of perfectly designed machine. For Galilei, the world was the atomistic world, created from elementary particles whose motion is the cause of all action. The key was then new application of mechanics which helped explain and define this movement. The art of mechanics[2], which was formerly the art of machine construction, intended to ease heavy physical work or to make a variety of toys, delusions, but also siege war machines, merged in Galilei's conception with physics. From Galilei's mechanically interpreted characteristics of nature emerged its possibility for mathematization. Therefore it would further be the language of mathematics, which best explains the world understood this way. From this knowledge, emerges a crucial role for these four key concepts: a world composed of atoms, the world as a machine, mechanical metaphor of reality and with mathematics as a language, the only one that grasps this sense of reality.

Another significant shift concerned the method. Galilei's famous experiment with a telescope of his own design was important not only for his heliocentrism, but also as evidence of the untrustworthiness of sensory perception, hence the phenomenal nature of reality. If the device helps us to achieve credible knowledge (which he tried to show by his astronomical observations) we can no longer continue to rely on sensory knowledge. Nature, as we know it, will become a secondary phenomenon, a deceit, which should therefore be observed by using instruments and mathematical descriptions of the findings of those instruments. With this concept '*the fact*' is introduced into Western knowledge as a principal, and yet still it is the only unquestioned institution of scientific knowledge. Galilei gradually establishes a new concept of truth, which is fundamentally different from all previous scholastic traditions. Men henceforth conquered the truth by constructing mechanical, mathematical laws based on *the model*. If this *constructed* model explains the observed phenomenon sufficiently, it also provides Galilei with similar ways on how to explain the related phenomenon. Thus, the causes of phenomena are not construed metaphysically, as was the tradition, but always on the basis of another phenomenon, and on its only aspect that is measurable. Henceforth, this will no longer be the speculation or hypothesis (offering just *possible* explanation) but it will be an experiment conducted using instruments that allow us to overcome the delusion of the senses and formulate mathematical laws that are the real causes of natural phenomenon.

In some ways, however, remains Galilei in comparison with Descartes on the side of phenomena effects. He agrees with him on the premise that the subject of exact science is perfect, quantifiable object, but for Galilei nature is perfect because it is governed by mathematical laws which we can find in it and uncover them by our intellectual reasoning, for Descartes it will be exclusively the human intellect, which is the only certain point of knowledge.

Reason and nothing but reason

Descartes' methodological scepticism is notoriously well known and there is no need to describe it here (Descartes, 1992). While Galilei builds on the premise of the harmonic order of the universe as guarantor of successful quantification and mathematization of nature, Descartes relies only on two pillars of relevant knowledge - God and reason. While God is the guarantor for him, reason is the source of knowledge. Like Galilei, Descartes builds on mathematics as the best instruments to reason, but not because of the mathematical nature of the universe, but because of the mathematical nature of reason itself. This shift is crucial, while for Galileo is the world discovered by reason, for Descartes the knowledge means the *construction* of the world through reason. *Ego cogitans* recognizes (de facto creates) the world the way, that the sensory perception phenomena decomposed into its semantic representation, a kind of directly visible ideas, from which reassembles a picture of these phenomena, but this time carried only by rational structure that does not rely on anything that would be perceived by senses. Descartes' method was aptly summed up in the book The *Veil of Isis* by Pierre Hadot (2006: 134). According to him, for Descartes is not important whether our *explanations* of phenomena are correct, but whether we can *reproduce* the phenomena according to our structures. This shows another form of the modern conception of truth, which is the truth resulting from the repeatability of an experiment, which is based on the reconstruction of the phenomenon, whose result is indistinguishable from the phenomenon itself. What exactly Descartes changed with his contribution? It would not be enough just to say that, along with Galilei they introduced a new mechanistic ontology, that based on other metaphysical assumptions which were later concealed in science (homogeneity of matter, the assumption of the three substances etc.). He was important especially for his method of systematic exclusion of corporeality, and sensorial perception in explaining how our world works. Perhaps the best insight into this Descartes' effort is represented in one of his lesser-known work which was brought into wider awareness in the Czech Republic by Ondřej Švec (2009). In his novel *Mundus est fabula,* Descartes used the atmosphere of anxiety and hopelessness of his time to convince his readers of the unreality of the world perceived by the physical senses and slipped in his own completely artificial world which was very accessible for our reasoning. It is also interesting what Descartes used to reach his goal. It was mainly nihilism of his time, which was reflected in many areas of life. The world was perceived as mere theatre in which people are only puppets, unsuspecting the things that create their fate.

Baroque cabinet of curiosities, unlike those from the Renaissance, displayed only a mixture of bizarre traits in order to highlight the arbitrariness and randomness of nature. To the feeling of worthlessness of human life also contributed one of the most bizarre theatres of this time - namely *theatrum anatomicum*, anatomical theatre. Paradoxically, Descartes reveals on the corpse; what life is. He rejects the conception of the soul as the animating principle that had traditionally made a life living and instead he shows the body as a mixture of bars, rods, ropes and pulleys, and also bones, muscles, tendons and joints. He disdains with the amazement at the phenomenal aspect of nature as a misdemeanour of the weak-minded who cannot recognize the mechanisms of operations hidden behind the phenomena and tries to show their outrage at the brazen observing the bowels of a dead body and consider it totally inappropriate. This is best illustrated by Descartes' famous statement about the living body, which according to him, differs from the dead body, just as wound up watches differs from unwound up ones (Descartes, 2002:34). Descartes teaches the unemotional observation of the facts without any empathy, and only on the basis of intellectual grasp and reconstruction.

I suppose that this is still not the most important thing for our cause. Descartes brings a change to the concept of nature which is even more crucial. He not only convincingly interprets all processes in nature and hence in the human body, with a few simple physic-mechanical principles, but he also redefines the natural character of the world's substance as an *inert homogenous matter*. I consider this moment in his conception of reality possibly the most crucial, even for current environmental thinking. Descartes does not explain the world as consisting of the values with differentiated qualities which are derived from their participation in Being (and the God), as was understood by scholasticism. He sets out the key metaphysical assumption for his philosophy, which the perceived world is, in terms of its elemental nature, *homogeneous*. In his conception stars, fire, water, air, light, and everything alive consists of the undifferentiated materials which we call matter. So this is his *res extensa,* this dead mass, forming a universal stuffing for the reality, as it is called by Zdeněk Neubauer, henceforth cease to have any value. God once and for all ceases to be present and actively participating in the world, but becomes the designer who created the world (matter), established the rules (laws of physics) and then initiated the impulse to animate all of this (inserted the energy). The world, the mass, this dead and dull matter does not have any distinctive qualities, but is endowed only with the physic-chemical characteristics. Therefore nothing remains to this matter what would still contain its value. Only humans represent the torch of consciousness in this obtuse swirl of matter and energy that moves in emptiness from nowhere to nowhere. The thing that will in the future cause astonishment, is no longer the individuality and uniqueness of different entities with whom we share the world, but the engineering wondering how was with such ingenuity of the mechanism this world "made". With what kind of sophistication is this inert mass staged into admirable forms and variations. So there is only one thing to be said – no – to be constructed! – differences in the structure of matter, mechanisms and

processes, which are animating it and the laws that controls everything – the mathematical laws, to be precise. It is finished.

Institutional form for this essential revolution then provided, on the other side of the Channel, La Manche, by Francis Bacon with his utopia *The New Atlantis* (Bacon, 1952). He not only applied the right to torture for the study of nature, but also came up with the idea of elite institutions, where such research should be carried out, including research methods for data-collecting expeditions and its processing. After Newton's supreme synthesis of this approach to the world in his pivotal work *Philosophiae Naturalis Principia Mathematica*, we can – with certain benevolence – interpret modern scientific thinking about nature through the nuances of these attempts (as it was already mentioned, most of them failed) to revise or overcome them.

Further development in science, therefore, led to a significant diversion from the sensory experience towards instrumental investigation of nature and to the mathematical, rather the statistical, description of the founded figures, which were about to completely replace the inadequate sensory perception. Physical senses were replaced by devices that better fit the Galilei-Cartesian conception of reality and its cognition, and to the world itself was slipped its mathematical nature. The compactness of science structure was then completed by adopting uniform physical laws and concepts of absolute space and time established as in the above mentioned Newton's work, the time as homogeneous and isomorphic as the matter from which a perspective on the Cartesian transformation *res extension* is observed and referenced.

Epistemological dependence of environmentalism

Biologism

It is thanks to the general admission of Newton's concept of isomorphic absolute time and its development in an historical perspective, approximately 150 years later, it has now developed evolutionary thinking in science and therefore also in biology. With the arrival of Charles Darwin's theory of evolution, was the bastion of science seriously endangered because with the variability of nature suddenly entered the world also the idea of spontaneity and the constant categories of ideal nature collapsed. The seemingly scary organic variability of Darwinian nature disrupted mechanistic view of the world - fully describable by physical laws. This "anomaly" did not last long. Darwin in his concept of evolution also seriously dealt with e.g. animal emotions and sexual selection, based on phenomenality of animals. His followers, currently (mostly laboratory) biologists who are following the way of new synthesis, with the discovery of DNA and by searching for all explanations of genetic information, again successfully returned to the physical concept of nature. The reduction of elements of life to the level of cells and genes re-enables a full instrumentation and mathematical grasp of the world and therefore also its mechanistic interpretation. Although we can find in biology a number of guidelines and disciplines that deals with the phenomenal world in some way even today (and partly again), we can say

that the main stream of biological researches of recent decades consists of disciplines that examine life at cellular and gene levels. And at those levels they also find their impetus.

Now, I would like to try to summarize at least the important thesis of contemporary biological dogma, which is crucial for the following discussion on environmental philosophy. These theses represent, as I suppose, a kind of essence of a contemporary view of nature, which is based on the assumptions and methods, as previously mentioned by Galilei and Descartes. This only applies on living nature:

- since its inception life on Earth has been powered and maintained by the evolutionary process
- the evolution is a function of mutations in genes and their selection through phenotype; life = gene flow
- the phenomenal (phenotypic) world is secondary in the terms of significance, everything important happens at the gene level; the body is only a vehicle for the passing of traits in time through the genes, respectively alleles
- information flows strictly in one direction - from genotype to phenotype, which establishes the phenomenal world as secondary, derived from genetic level
- at the level of phenotype is *fitness* the key parameter that represents the best adaptation to the environment and the ability to pass on the maximum of copies of genotype carried by an individual
- the evolution is proximal, does not direct anywhere, but "creates" situationally
- the evolution is driven by genes whose determination is self-replication by achieving maximum number of copies
- a life is carried out on the metric scale between DNA and the planetary ecosystem - between microevolution and macro-ecology; all these levels are spatially describable only by uniform system of metric and time units (which is basically the same thing)
- the current form of nature is merely the result of changes in space between genetic determinations of traits of organisms and the environmental conditions over time
- the diversity of life is the result of random mutations, related to the circumstances of the environment, which are otherwise strictly mechanical and a highly accurate replications of the genome
- plants and animals species are carriers of genetic information which through the course of evolution are created and vanished with varying speed and intensity; species extinctions and explosions are a natural part of life on Earth
- the basic imperative of evolutionary biology is to explain the principles of the functioning of the living world *from* itself, without the intervention of transcendental being, i.e. God

- Darwinism is an explanatory framework general enough to be able to explain anything and will eventually provide an explanation of any phenomenon, if it is given sufficient attention by scientists (Zrzavý, Storch, Mihulka, 2004:283)

Why is this reminder of the basic dogmas of biology important for environmentalism? The subject of environmental interests is mainly the phenomenal nature, which we physically inhabit and which has its own specifics, characteristics and also the peculiar problems associated with it e.g. environmental issues. We should also realize that this phenomenal world is currently interpreted by biology as ontologically secondary and thus in a certain sense inferior. This means that its eventual destruction, to any extent, may result only in exceeding its significant simplification and disappearance of complex forms of organisms. However, according to current ideas about the nature of the living world, nature would after some time evolve back into more complex life forms, as this probably has happened in history several times (Dawkins, 2004). So, that is the first problem. The phenomenal (phenotypic) world is still secondary, which means inferior in its significance.

The most important thing about this is the fact that nature, seen as an epiphenomenon process of dynamics at the level of genes, respectively cells, is in principle still thought as Cartesian. DNA, which is the bearer of characteristics forming the particles of matter, as inert as *res extensa*, all events happening at this level are controlled by the same anonymous general laws, the same laws which Descartes's God used to revived the mass. Everything, from the atoms of the DNA bases to the gigantic body of humpback whale, is in principle still the same dead matter. And even if we study e.g. the behaviour of these extraordinary cetaceans we are still talking about them as the sum of the general rules not actually belonging to the specific animals. Acting as if their behaviour was not their own. It is as if they just leased some of the natural laws from this kind of universal pool of natural laws, and what makes individuals "original" is the distinctive mix of these common characteristics. Nowadays, biology in principle still considers nature in the same way as Galilei, Descartes and Newton, and uses the same basis for its examination and fundamentally similar methods and is founding / inserting into the world similar phenomena. Thus structures, functions, and physic-chemical characteristics are understood as general and explained by the universal language of mathematics. And of course group phenomena, for which there are many useful statistical tools. Every science has as much science in it as maths. And the same applies to biology as to any other scientific discipline.

Biology and environmentalism

However, from this reality follows for environmentalism serious context. First, there is nature, whose interpretation environmentalism take from natural science. Then in its texts interpret it as if it was "alive" but this is essentially still the same dead Cartesian mechanism. With this ends, at least, the area of environmental ethics that seeks to interpret the values of nature as nature's own – *intrinsic* (Hargrowe, 1992b). For those values there is simply no place in the world build like this. Because of the world's character

the values do not belong there! Second, significantly, the environmental discourse is based on the critique of the scientific method, not only for the consequences of its application (pollution, the possibility of industrial exploitation of nature etc.), but mainly because of the image of nature, which is presented to us as if the nature is dead and degraded to a dead mass (see Merchant, 1990). Thirdly, that it takes from science its knowledge which then is completely exposed to all the turbulences, upheavals and paradigm-shifts, occurring in scientific developments. And therefore thanks to the origins of current knowledge about nature, which it is built upon, environmentalism is not an epistemologically peculiar scientific discipline. Environmental Studies is, from the definition of its name, primarily about nature, respectively about the investigation of interactions between human culture and nature. However, if the environmentalists want to learn or tell something scientifically relevant about nature, they often adopt or just reinterpret findings from the natural sciences, of which they are not the originators, with all the risks that this entails. In fact, the biggest problem I see is a paradox of a large part of environmentalism (especially in its academic forms) that can be simplified into this question: is the nature which environmentalists struggle to preserve the same nature to which the natural sciences gives us access?

Nature as a product of blind evolution

I am convinced that the most serious problem for originality, relevance and meaningfulness of ecologism is the evolutionary interpretation of nature in its current, mainstream, neo-Darwinian interpretation. When we look at discussions, for example, among Czech ecologists with environmentalists, we encounter in almost every argument incompatibility of two very different attitudes, which can be summarized by the following sentence of Jan Zrzavý: "*The problem is the frame of reference. The line to which the environmentalists relate to, an historical basis that is Brehm's Life of animals, i.e. the years 1890 - 1900. From it originate lists and status of species in the Red List of Threatened Species, which is a non-biological, non-evolutionary and essentially non-ecological approach"* (Daněk, 2010:42). The core of this objection is simple: environmentalists base their efforts on current phenotypic appearance of nature, which is necessarily temporary from an evolutionary perspective. They do not understand that the fundamental characteristic of nature is in permanent change, that man has a part and a role as an actor, and therefore phenomena such as man caused climate change and species extinction belongs naturally into it too[3]. In fact, man is a part of nature as any other animal with everything that this brings. Whatever the criticism of this prominent Czech biologist is; whether it be closer or farther from truth, a picture of life that is created by contemporary evolutionary biology is completely different from the one with which normally ecologists work with, i.e. from the natural world of our everyday reality. This difference is not only a question of a "technical" approach to nature, but fundamentally ontological and from it resulting values.

If we put in a contrast to evolutionary thinking, virtually any of the major themes of environmentalism, which aims to deliver a scientific explanation with a value to environmental problems, we will clearly see its inappropriateness. No matter if we take e.g. the loss of biodiversity, ecological stability, species extinction, ethical or aesthetic questions, or any other - all of their arguments are completely ineffective if this come to a dispute with the explanatory powers of evolutionary biological interpretation of the current status of nature, including environmental issues. Why? Because they are not built on a Cartesian model, which has in its neo-Darwinian form so broadening interpretation skills. And we are left with anonymous synchronisation of *dead information* and *dead matter*. Anything else we would like to add for explanation is unnecessary or even counterproductive. Gene-centric, Monod-Dawkins's biology, which still form the basic interpretive axis of the world, interpreted by genotype, can endure all the alternative attempts of disengagement with just variations of these two "substances". The biologists only describe the structure, function, variability and frequency of algorithms into which these two variables, matter and information enter at different levels of description (organization of matter). Without question, whether it is about replication of DNA or about the behaviour of a lynx. Admitting that after the removal of all historical “deposits” and subjective “slags” nature will reveal to us only in its Cartesian image is painful, but necessary for the realization of the foundation of environmentalists thinking. Neo-Darwinian reductionism is offensive. However, no other explanation, that would offer a similar logically consistent and robust synthesis of theory and empiricism, is currently known to us.

I will attempt to think through the consequences of this understanding of the world for environmentalism and I will deliberately escalate and radicalize the situation in order to highlight the contrasts clearly. Let's have a closer look at a selected part of the environmental discourse using optics of evolutionary biology. First, it is important to realize that man, in his evolution, is an evolved primate from the genus *Homo* and all his *behaviour*, if we are consistent in this interpretation, should be explained using the same instruments, which we use to explains the behaviour of other species created by the evolution of animals, e.g. using socio-biology, ethology, respectively evolutionary psychology (assuming that we want to include man as an organic part of the current evolution, which in the case of biology, we certainly want to do). By using the tools of the above mentioned sciences we can explain any behaviour of organisms, including man's behaviour and therefore relevant to the dispute over environmental issues. From this perspective, concepts such as biodiversity or the ecological stability are only optical kin-deceptions of our own species, just sociomorphic (resp. speciomorphic) projections. Extinction is a natural part of the metabolism of nature, as well as for example wiping out other species of organisms by man is a natural part of the ethology of the human species and therefore also a part of evolution itself. The value-working with the term "extinction" in this case is evidence of the elementary misunderstanding of the principles of evolutionary processes and an inability to understand evolutionary nuances. Extinction is a natural part of the dynamics of the living world.

And an even more pathetic picture appears when we look at poor attempts by disciplines such as: environmental ethics or aesthetics, to discuss the biological interpretations of the living world. The attempts, which are completely disproportionate to the evolutionary biological ones. The attempts, whose incommensurability lies in their desperation, when they pretend to be exegesis, or even perhaps relevant alternatives to evolutionary explanations of man behaviour. And it does not matter if we recall, for example, Kohák's arbitrary mixture of discourses in his interpretation of Wilson's concept of sociobiology (Kohák, 1998:133-137), which allows him to find whatever he needs, or indeed Binka's (2008:29 and further) – respective Popper's – search for a blind spot of science. In the first case, the author somehow overlooks the fact that biology describes the reality (working on a solid empirical basis) not visions, and therefore, based on biology methods can only ask "*what is*" and never "*what ought to be*" (see popular *be-ought* dilemma). As well as this, he does not realize that asking "*what ought to be*" from the perspective of biology is just a part of the ethology of the species *homo*. For nature itself, is anything that falls into the domain of questions and answers on "*what ought to be*", completely alien. In the second case (Bohuslav Binka) is a typical attempt of a humanistic scholar to challenge the Neo-Darwinism as the value after its value statement was introduced to him. But most importantly - even if the Neo-Darwinism was, despite this, a value oriented attitude[4], he can afford to ignore it just because he simply doesn't need it for explanation how nature works. His non-value explanation of how the living world *is* functioning is not only elegant and consistent, but also unrivalled and uniquely functional and effective in its practical implications. For an explanation of the structure and function of nature (rationally, we are not able to say anything more about it; and nothing else then rational explanation cannot be used in science), no judgments of values are clearly needed. Ethical issues are totally skew for evolutionary explanation of nature and the functioning of life on Earth (including humans) is completely irrelevant and biologists are drawn into them basically against their will. When we once again realize that evolutionary biology is able to organically include man with his ethics and value attitudes into the whole history of the *entire* living world, this then changes the ethics into something exclusively only for man, and it just becomes one of the finesses of bizarre ethology of one of the species of primates, which has nothing in common with the real nature principles. Man has been living in on the planet (along with his ethics), maybe for only a few hundred thousand years. Life on earth is 3.8 billion years old, and what has been maintaining and powering it; has nothing to do with ethics. So again the ethic is from an evolutionary point of view only one of the finesses of ethology of the genus *homo*, without any relation to the thing that drives the living world. Like all other "spiritual teachings" it is, without a strong empirical basis, still trying to somehow get to a focal point that creates meaning, which has been, however, long occupied a carefully guarded by evolutionary biologists, hence mathematized natural sciences. In this sense, the protection of endangered species, landscape, climate ... all these are only ethological manifestations. Much worse cases are the concepts of environmental discourse which explicitly betrays themselves e.g. protection of the

genetic diversity, the concept of ecosystem services or even willingness to talk about nature as a natural resource. They all are just sad examples of how environmentalism, which, in the 60s of the last century, established itself as defiance against the consequences of bigoted scientism thinking about the world, but later by itself assented with the way of thinking that cause environmental problems. Probably, because then wanted to become a science and obtain at least formal recognition.

In this brief extreme exposé led by the evolutionary biological perspective[5] I wanted not only to highlight the fact that biologism in its deterministic and utilitarian attitude which doesn't need any other interpretation resources than those which it already owns and uses, but mainly two other facts: although this is something that humanities scholars (including environmentalists) don't like to hear; their interpretations of nature and natural scientific knowledge have at the very most a value only as commentaries, but they are not involved in the creation of their own understanding of the world. There are no solid synthesis of theory, which would be based on its own empiricism and with some references, to the latest cosmetic misinterpretation of natural scientist, is simply not enough. They do not have a "Galilei's telescope" with which they could establish their equivalent of the institution of scientific *fact*, and they also do not participate enough in *gestell* (Heidegger, 2004). Their interpretations relate *only to the human world* and *only to the relation between man and nature*, whose image they have taken over from the natural sciences.

What environmentalists protect when they protect nature?

If some of my assumptions are at least correct, another more crucial question arose from them: *So, what do environmentalists and ecologists protects when they protect nature?* The process of evolution!? The Cartesian mechanism of replication of the genetic information!? The principles of the organization of matter, therefore form? Or the patterns of behaviour? But *why*? None of the above mentioned requires or needs any protection by *itself*.

Dead Cartesian *res extensa*, as well as natural laws independent on the matter, do not need care. After the previous forms of life disappeared, the existing forms developed in the above explained game of chance and necessity, so this process continues and also thanks to it our species still exists. So, currently extinction prevails over speciation? That is actually a normal part of the evolutionary process. Or are the environmentalists protecting the current organic forms simply because they were born to their presence and they are used to them? Then again evolutionists are right, and their truth is consistent with their way of thinking: the real reasons why we protect nature are simply that it is nice, and we find it amusing and we like it. And, because we need it as a resource for life. But definitely not because it would be seriously threaten by man (Daněk, 2010: 48). Therefore we are protecting nature only *because of our self, man, not because of it itself*. Nature itself does not need any protection. Strictly speaking, there is nothing to protect.

The processes that gave origin to a merely secondary (!) phenotypes? Or the perishable phenomena themselves?

What do the environmentalists mean when they talk about living nature? What is the different *life* if not the dead informational and mineral processes? Are they working, on their interpretations of nature, with something different than for example principles of photosynthesis, water retention mechanisms in the landscape or the supporting capacity of the environment, when they actually want to announce something serious about nature? What is "living" on the photosynthetic process or mechanism of metamorphosis of a cocoon into a butterfly? Does the environmentalist find (and is he able to somehow provide well-founded prove) in a solitary linden tree something more than a few tons of heterotrophic biomass and an amount of transpiration and respiration processes? Something that makes it definitely alive? If not, then we have no need for environmentalists at all! Their job will be done by biologist - the professional. And if so, what then? Are environmentalists able to incorporate, that different thing which they see, in their own organic interpretative framework, which could, at least principally, explain and *convincingly empirically demonstrate* the character of any natural phenomenon as alive? I am afraid not. The way they will work with the qualities of phenomena e.g. in the already mentioned ethics, aesthetics and landscape ecology, it will be (and that is even in the best case) only locally consistent and in its persuasiveness and reaches absolutely incommensurable with evolutionary explanations. That life in ethical interpretations will be introduced, not reported or documented. The evolutionary biologists (or simply biologists) provide the "material" and are "at source", they create our knowledge about nature and all the other disciplines that somehow deal with the events in nature only take what natural science brings.

These are the cardinal questions for environmentalism: Is nature distinctive in the sense of a *living being* or is its distinctiveness exhausted by coordination of anonymous mass and anonymous information in time? Do natural phenomena have, in their wholeness, at least some distinctiveness which would thus established their value, or they are just mere epiphenomenon of genetic information which are simple carriers that gathered, in some time, the internal structure and complexity? As long as the evolutionary biological interpretation remains valid, environmentalists will be just one interest political group, or at best the janitors of current form of derived phenomenal world, while biologists will remain the prophets, owners and guardians of the "reality" of nature. And if the evolutionary biological interpretation of nature is relevant and complete then perceiving its essence, we would have to conclude that environmental issues can ultimately be reduced to geoengineering. Thus, management of natural resources, municipal sanitation and elementary environmental literacy, and how to properly recycle and consciously save resources. The ethical and aesthetic opinions are the private matters of each individual. The ultimate answer to solving the environmental problems would then be the technologies, demonstrated by e.g. in the book *Factor Four* (Lovins et al, 1994) and establishment

of the relevant government authorities, which would divide and supervise the optimal functioning performance of processes in delegated segments of the society and the country. Similarly, like when a technician in a factory oversees the smooth running of production processes. (Apropos, this vision was close to the social atmosphere of the second half of the last century, as we can read in Odum's *Fundamentals of Ecology* (Odum, 1977) or in the significant environmental publication from the 80s called *The Ecological Synthesis*. [Duvigneaud, 1988])

I suppose that if the evolutionary biology interpretation remains a binding framework for understanding the nature, environmentally oriented considerations, assuming nature as alive and distinctive, have no chance to be recognized for their relevance, simply because they have no support in our current understanding of the nature.

And what about Huxley's question of the place of man in nature? Nature is thought of as a product of the process of evolution therefore, man no partner for nature. *Man is not part of evolution, but its subject*. Being part of something means (at least as I understand it) to have an active, conscious, intentional participation and contribution to the very principles of the event. Being the subject means to be left at the mercy of forces that shape these events. To the “Being” the ancient and medieval man even participated as a semi-divine, conscious entity. But to evolution, being itself a vehicle for replicating molecular replicators, he hasn’t participated at all. He is only a puppet, following proximate goals, but he is necessarily led within constrains which end up with ultimate goals, about whose meaning he is completely unaware.

Now if the benevolent reader puts together an image, which I tried to outline referring to selected highlights of the works of Galilei and Descartes, to the current conception of life and finally to the relationship of evolutionary biology and environmentalism, he may now perhaps see a little more clearly (and perhaps a little more convincing) ideas about how our current understanding of nature still deeply entangled in the Cartesian conception of the world and how paradoxical is the situation of environmentalism, which builds its foundations on this, to life itself an extremely hostile science.

Intermezzo: alternatives

Since Descartes’ or Darwin’s times, there have been many attempts to come up with alternative interpretations of the natural world. Such attempts have, of course, not been absent from environmentalism either, though they have not entered the mainstream and their potential has not been fully developed. Leaving aside creationistic approaches (i.e., Intelligent design) and initial Drieschian vitalistic conceptions, we can distinguish four sweeping theories: attempts based on Goethe’s conception of biology; Lovelock’s Gaia theory; Sheldrake’s attempt to revive the Aristotelian *causa formalis* by today’s means; and finally, Capra’s attempt at a holistic explanation of reality through a synthesis of Eastern doctrines and the findings of subatomic physics.

All these alternatives are characterised by a somewhat holistic approach to the explanation of the world, which in a sense corresponds to its phenomenal aspect. Physicist Fritjof Capra made waves with his *The Tao of Physics* (Capra, 1975), in which he looked for conceptual parallels between physical theories and Eastern philosophy. This bold synthesis, however, has earned the author the label of one of the foremost New Age ideologues. By his subsequent work, *The Turning Point* (Capra, 1982), Capra joined those authors who saw the cause of the ecological crisis in the cultural and philosophical roots of the Western civilisation. Capra did not merely criticise, but also looked for a synthetic theory. Based on complex mathematical models and a theory about dissipative structures, Capra's synthesis offers a holistic interpretation of reality which is founded on the idea that all life is connected across the multiple levels that the theory describes. Capra's first book was a bestseller, but it was later attacked for being founded on obsolete and unconfirmed physical theories.

English plant physiologist Rupert Sheldrake's (1981, 1988, 1991) unorthodox conception of morphic fields and morphogenetic resonance was no particular success either. The theory attempted to explain the morphogenesis of plants and animals as well as the "inheritability" of patterns in the crystallisation of minerals or even selected cognitive abilities found in higher animals and man. Sheldrake's theory might have proven useful to the environmental discourse had it not been taken apart in 1981 in a review by John Maddox, senior-editor of *Nature*, who called it an example of pseudo-science. Maddox's devastating critique banished Sheldrake from the scientific circles for the rest of his life.

James Lovelock's (2000) Gaia theory fared only slightly better. Lovelock's attempt to describe the planet Earth as a superorganism which maintains stable conditions on its surface by employing a system of thermodynamic and organismal feedbacks and balances was not met with such scathing criticism as Sheldrake's theory, nevertheless, the scientific community has regarded it at least as superfluous, a metaphor that does not contribute anything new (Free, Barton, 2007).

Alternative explanations of the living nature which draw on the roots of Goethean science (not in a methodological sense, but in an epistemological one) are perhaps the most promising, although not quite well-known attempts at explaining the world. Two authors should be mentioned in this context. In his *The Wholeness of Nature* (Bortoft, 1996), British natural philosopher and independent scholar Henri Bortoft attempted to revive the Goethean approach to empirical investigation and participative phenomenology, which were rooted in the human perception of living things as they present themselves to man's natural consciousness in their natural state.

The other name is Baron Jakob von Uexküll, a largely forgotten German thinker who has recently been rediscovered for the purposes of the environmental discourse. Uexküll's conception of *umwelt* is a remarkably original metaphor which, at the level of phenomena, provides argumentative leverage to the causes of environmentalism.

Bortoft and Uexküll have a significant advantage over Sheldrake and Capra: while the latter (together with Lovelock) have been connected to New Age, the former are representatives of the German tradition of biology which was side-lined after WWII due to unfortunate political circumstances. The German tradition is far from scientifically irrelevant. The relative obscurity of these theories is attributable largely to the hegemony of British and American science in the post-war period.

Nevertheless...

I am also convinced that despite all the bold attempts to find alternatives, which have been a source of hope for a break with Cartesian reductionism, we are still thralls to the same objectivist way of exploring nature, even if we do not like to admit it. And our attempts to disengage are over evaluated too seriously in comparison with real consequences. Life as a sovereign attribute of nature is still hopelessly hidden. No radically new way of knowledge, that would take us out of the objectivistic framework, has not yet appeared within or without the environmental discourse. Postmodernism either has not yet arrived in the natural sciences, or it does not bring potential for change important enough to force alternation of the massed Cartesian away from scholasticism. The difference in the content of contribution between Patočka's reflection of science from the late 30s of the last century (Patočka, 1992), Arendt's from the late 50s (Arendtová, 2007: 323-375), sociobiological concept of E.O. Wilson (1995) from the late 80s and evolutionary biology by Zrzavý at al. from 2004 (Zrzavý, Storch, Mihulka, 2004), is in principle negligible. Some of them are commentators, some proponents of objectivism in science, some bring evidence for it, but all what they presented is still in the same spirit. The only functional and powerful interpretation of the world and nature is fundamentally still objectivist. At present, we have no choice than simply accept this fact. The schism outlined by Patočka is still valid: *"Modern man (...) lives in two worlds, in his natural surroundings and in the world that is created for him by modern natural science, based on the principle of mathematical regularities of nature. The discord which permeated our entire life is the own source of spiritual crisis that we are going through."* (Patočka, 1992:9)

The question now is whether we are willing to accept this reality and try once more to move on to a difficult search for environmentally friendly understanding of nature, or whether we will continue to live in schism, which in the desire for recognition of the relevance of our fears we hypocritically cling to science, which is its source.

Conclusion

Current environmental problems are just one of the manifestations in dividing the Western conception of reality, which has lasted for several centuries. This schism is manifested in very particular consequences of dealing with nature, which is still thought to be a dead mechanism, as well as in deep internal conflict with environmental discourse.

The mechanistic-atomistic model of the world as built by Galilei, Descartes and Newton, in principle, is still valid today, at least in biology. This idea of reality, projected later into the linear conception of time, extended to the scale of geologic eras, created foundations of evolutionary conception of life which are still in the same way mechanistic, only sophisticated and empirically better founded. If we respects the current rigorously-biological explanation of the origin and functioning of nature, which considers the evolution to be the fundamental driving force of life at the cellular and genetic levels, the environmental efforts do not make any sense if they declare as their objective the protection of nature fundamentally threatened by man. Strictly evolutionarily said; as much as the environmental discourse is only part of a very complicated ethology of the species *Homo sapiens*, any consequences of their actions are an organic part of nature and cannot severely threaten the driving forces that form life on the planet. The human species has no influence whatsoever on these forces (mechanisms of evolution, replication of genes, flow of energy and circulation of minerals etc.). The environmental problems are therefore, in terms of a larger spatial and temporal scales, exclusively private issues of human kind if they respect the knowledge of evolutionary laws all their efforts are ultimately strictly anthropocentric (and they cannot be different).

The inherent contradiction of environmentalism consists in the fact that it is trying in many ways to protect nature from various consequences of using the mathematical-mechanistic view of the world, but to understand and resolve those consequences by using knowledge of biology, which is ultimately based currently on the mathematical-mechanistic thinking about the world. So with its work, it quite possibly contributes to the problem, and also at the same time is becoming epistemologically dependent on science, that brings this knowledge. Environmentalists do not have its own concept of reality, which would at least try to offer original explanation of nature as living and thus gave to environmental problems larger (perhaps even ontological) relevance.

This is, in my opinion, the biggest challenge for environmentalism in the 21st century. Until it offers at least a vision or concept of a determined view of nature as truly *living*, it will have to make do with what was aptly summed up by Zdenek Kratochvil: "The *Neo-Darwinian evolutionism provokes with its reductionism, but a more inclusive interpretation of the world is not provided by science, or theology nor philosophy. The thinking of nature, whose level would be proportional to the current crisis of nature, ("ecological crisis" of the external nature as well as crisis of our human nature), remains difficult and almost unsolvable task. The order of nature belongs, however, that the tasks like this can hardly be projected and then managed, but "are" solved by all open perceptions and honest thinking*." (Kratochvíl, 1994:57)

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Notes

[1] Clear and instructive summary of works of tackled authors offers (e.g. Floss, 1987).

[2] MECHANÉ, in Latin among other means also trick.

[3] Similar argument but from an environmental philosophy point of view was brought by Richard A. Watson in his article: *„A critique of anti-anthropocentric biocentrism“.* (Watson, 1983) It is symptomatic that this American geologist and philosopher dedicated significant part of his philosophical work to Rene Descartes.

[4] As obviously it is, but now I am speaking from a position of Neo-Darwinism.

[5] I don’t think that any evolutionary biologist would ever say it like this.